Effects of voluntary intellectual capital disclosure for disclosing firms
A structured literature review

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Abstract

Purpose – Mandatory disclosure of a firm’s intellectual capital (IC) is restricted by accounting regulations, leading companies to use voluntary disclosure to inform their stakeholders about their IC. However, voluntary IC disclosure (ICD) is costly and may lead to a leak of knowledge. Consequently, firms should only engage in voluntary ICD if it really reduces information asymmetries and leads to reduced cost of capital or a better reputation. The purpose of this paper is to review, integrate and critically discuss the results of studies examining various effects of voluntary ICD.

Design/methodology/approach – The authors use a structured literature review approach.

Findings – The results mainly support the expected positive effects of voluntary ICD on monetary value for disclosing firms, e.g. lower cost of capital, higher firm value or increased analysts’ following. Nevertheless, the studies mainly represent second stage IC research.

Research limitations/implications – Additional studies concerning effects of voluntary ICD outside capital markets are recommended. Future studies should be based on an improved study design concerning the theoretical underpinning and concept of value relevance, sufficient sample sizes and alternative sources of ICD.

Practical implications – Due to positive monetary effects, firms should engage in voluntary ICD.

Originality/value – The paper reviews and integrates the state-of-the-art of empirical research of effects of voluntary ICD. It contributes to and enlarges the debate concerning the value relevance of voluntary ICD with respect to the different stages of IC research.

Keywords Value relevance, Intellectual capital, Empirical study, Structured literature review, Voluntary disclosure

Paper type Literature review

1. Introduction

There is empirical evidence that investments in intangibles, such as knowledge or brands, are economically beneficial to firms (Heiens et al., 2007). Often, these intangibles are denoted by the term intellectual capital (IC) (Choong, 2008). Despite its relevance, accounting regulators are reluctant to capitalise IC into firms’ balance sheets. However, incomplete disclosure increases information asymmetries. Analysts, investors and other stakeholders thus have difficulties in evaluating IC-intensive firms. Consequently, studies find a decreasing relevance of mandatory accounting information (Basu and Waymire, 2008; Ciftci et al., 2014; Hail, 2013).

To compensate for shortcomings of mandatory disclosure, firms voluntarily disclose information about their IC. From a capital market perspective, voluntary IC disclosure (ICD) reduces information asymmetries and thus supports a realistic market valuation leading to lower costs of capital and higher market values (Bismuth and Tojo, 2008; Castilla-Polo and Gallardo-Vázquez, 2016). In addition, stakeholder theory and legitimacy theory postulate that voluntary ICD is also relevant to stakeholders outside capital markets, e.g. to potential employees who want to inform themselves about a firm’s human capital strategy (An et al., 2011).
Nevertheless, these positive effects are doubted, because firms have an interest in disclosing only positive information about their IC (Dumay, 2012). As studies revealed a limited implementation of IC statements (Bruggen et al., 2009), it is concluded that the rationale for voluntary ICD is not the reduction of information asymmetries but rather the alignment with common industry practices (Dumay, 2012). Given such a tension in literature, we think the question of effects of voluntary ICD should be answered empirically.

Thus, our purpose is to analyse the value relevance of voluntary ICD by addressing these research questions:

**RQ1.** How has empirical research analysing the effects of voluntary ICD developed so far?

**RQ2.** What are the foci and critique of this research?

**RQ3.** What are the effects of voluntary ICD for the disclosing organisations?

**RQ4.** Which future research paths and conclusions can be derived?

We focus on voluntary ICD because of the high relevance of IC for the economic development of companies in modern knowledge-based economies. Based on stakeholder and legitimacy theories, we apply a broader concept of value relevance including also non-monetary effects such as firm reputation. To avoid problems of traditional narrative reviews, a structured literature review (SLR) is used (Cooper, 2010; Massaro et al., 2016).

Our results indicate a limited number of studies and a fragmented research field. We find evidence that voluntary ICD reduces information asymmetry, improves analysts’ valuation and lowers cost of capital. Moreover, there are weak indications for a positive relationship between voluntary ICD and firm value and reputation. Nevertheless, nearly all studies represent second stage IC research without applying a broader understanding of value or analysing underlying processes of value creation. A significant share of studies lacks sound theoretical underpinnings and is based on small samples. Multi-method approaches and a broader concept of value should be used to analyse firm-specific processes of value creation and non-monetary effects of ICD.

The paper contributes to voluntary ICD research threefold: it summarises and critically evaluates the state of empirical research of effects of voluntary ICD, it reveals evidence for monetary and utility value relevance of voluntary ICD and it identifies research gaps concerning effects of voluntary ICD outside capital markets and research design.

The paper is structured as follows. Section 2 discusses effects of voluntary ICD based on a short review of disclosure theories. Section 3 describes the SLR methodology and selection of studies. The results are described in Section 4 and discussed in Section 5. In Section 6, implications for research and practice are derived and limitations are revealed.

### 2. Voluntary IC disclosure

Although the share of intangible assets in European firms’ balance sheets has increased since IFRS implementation (Sahut et al., 2011), annual financial reports are considered incomplete with regard to IC (Canibano et al., 2000; Mouritsen et al., 2005). Thus, studies found a decreasing value relevance of mandatory disclosed IC information (Basu and Waymire, 2008; Ciftci et al., 2014). To reduce information asymmetries, companies voluntarily disclose IC information in financial statements, through event- and issue-specific disclosure, and in constructs such as value creation stories (Holland, 2003).

Nevertheless, firms only disclose information if perceived firm-specific benefits outweigh costs and create additional value (Healy and Palepu, 2001; Von Alberti-Alhtaybat et al., 2012). Traditionally, value is defined as equity value and thus value relevance is the usefulness of accounting and non-accounting information for equity valuation (Holthausen and Watts, 2001). Therefore, the concept of value relevance is often discussed from the perspective of capital markets (Holland and Johanson, 2003; Verrechia, 2001; Dye, 2001).
Overall, agency theory states that the quantity and quality of voluntary ICD is positively related to a firm’s market value (An et al., 2011). It is argued that “better quality information allows investors to better monitor management and to make more accurate estimates of parameters underlying the future stock returns, decreasing the non-diversifiable estimation risk and the uncertainty about future cash flows and future profitability [...] Second, an enhancement in the extent of disclosure leads to lower transaction costs. Improved disclosure increases the likelihood for investors to trade, it increases the liquidity of firm’s shares and decreases firm’s cost of finance” (Orens et al., 2010, p. 1062).

From a signalling theory perspective, voluntary ICD is regarded as “good news” and may attract new investors (Healy and Palepu, 2001; An et al., 2011; Castilla-Polo and Gallardo-Vázquez, 2016). According to legitimacy theory, a company has to convince society that its activities are in line with societal expectations. Due to the significance of IC for a firm’s sustainable development and economic success, a company should voluntarily disclose IC information to fulfil these expectations. Moreover, voluntary ICD can support customer and supplier relationships and attract talented employees (Sáenz and Gómez, 2008). Overall, the fulfilment of expectations can lead to an inflow of capital, labour and customers (Healy and Palepu, 2001; An et al., 2011). Consequently, the concept of value has to be enlarged: “value is not just monetary but incorporates worth and importance of the products and services to customers and other stakeholders” (Dumay and Garanina, 2013, p. 13).

Nevertheless, there are barriers to the realisation of these positive effects. Analysts may not understand how IC contributes to the corporate value creation process. In addition, they may face problems of validity and reliability concerning qualitative IC information. Dumay (2012) argues that voluntary ICD is biased because firms disclose only favourable information. If analysts and investors are aware of this bias, they do not use IC information for valuation purposes. Furthermore, time constraints may lead to restricted attention of information users, so that they focus on a limited number of mostly financial indicators. Finally, irrelevant ICD might even increase information asymmetries (La Rosa and Liberatore, 2014; Castilla-Polo and Gallardo-Vázquez, 2016). Despite these problems it seems to be widely accepted that ICD reduces information asymmetries and thus creates value.

Starting with Petty and Guthrie (2000), various literature reviews of ICD have been published. Some give an overview of the quantitative and qualitative development of ICD research (Petty and Guthrie, 2000; Guthrie et al., 2012; Cuozzo et al., 2017). Others focus on studies analysing the determinants of ICD (Abeysekera, 2006; Ienciu, 2014) or discuss methodological shortcomings (Dumay and Cai, 2014, 2015; Goebel, 2015). So far, none of the reviews has concentrated on studies of effects of ICD.

3. Study design
3.1 Methodology
Traditional literature reviews are “widely criticised for being singular descriptive accounts of the contributions made by writers in the field, often selected for inclusion on the implicit biases of the researcher” (Tranfield et al., 2003, p. 208). To avoid these problems, an SLR adopts a standardised, transparent and replicable process of literature search and analysis (Cooper, 2010; Massaro et al., 2016).

As an SLR is based on content analysis to categorise the selected articles, a coding framework was developed (see Table I) and a data extraction sheet was used. One researcher coded all articles, the coding was checked by the second researcher. To ensure external and internal validity disclosure theories and previous studies were applied to explain our results.
3.2 Literature search

A query of titles, abstracts and keywords in several literature databases[1], using the search terms “intellectual capital” and “disclosure” in combination with “value relevance”, “success”, “analyst recommendation”, “cost of capital”, “market value” or
“performance”, was conducted. The findings were checked via a Google Scholar search and crosschecks in the reference lists of the reviewed articles. We covered a research period from 2000 to 2017.

From this pool, an initial group of articles was selected and analysed with respect to the following criteria:

- Studies analysing the effects of mandatory disclosure or indicators based on mandatory disclosure like the value added intellectual coefficients were not considered.
- Studies had to use voluntary ICD as an independent variable and its effects as dependent variables. Studies investigating determinants or characteristics of voluntary ICD were excluded.
- The studies should be based on larger samples. Thus, case studies were excluded.
- The studies had to be published by a reputable company such as Elsevier or Emerald.

Thus, a final group of 38 papers was extracted for the SLR.

3.3 Coding framework
Our framework consists of nine categories (Table I). The first category classifies the articles according to their bibliographic attributes. Citation analysis helps to understand the qualitative evolution of a research field and to identify the most influential researchers. Based on a Google Scholar research, we count the total numbers of citations (TNC) and the citations per year (CPY) of each article at the end of 2017. The locations of the authors’ institutions are analysed as a second category.

The third category covers the research objects. We assume that voluntary ICD is mainly conducted by companies. But also universities, non-profit organisations or start-ups may be interested in ICD. In addition, IC information is disclosed during initial public offerings (IPOs) (Abhayawansa and Abeysekera, 2009; García-Meca and Martínez, 2007). The fourth category captures the sample sizes.

The fifth category classifies the source documents of voluntary ICD. Companies disclose IC information in their annual financial reports, on their corporate websites, in press releases, in IC statements or via private channels (Healy and Palepu, 2001; Castilla-Polo and Gallardo-Vázquez, 2016). In addition, IC information is disclosed in analysts’ reports or prospectuses (García-Meca and Martínez, 2007).

The sixth category classifies the studies with respect to their theoretical underpinning. The seventh category describes the studies according to their measurement of value relevance. In second stage IC research value is traditionally defined as equity value and thus value relevance is the use of accounting and non-accounting information for equity valuation (Holthausen and Watts, 2001). Concerning the monetary value of ICD, we assume that financial analysts and investors use IC information to improve their forecasts and valuations. Therefore, it has the potential to influence the expectations of the capital market and thus a firm’s risk assessment, cost of capital and market value (Holland, 2003; Bismuth and Tojo, 2008). Utility value is the usefulness of ICD from the perspective of firms’ stakeholders and can lead to monetary value. Social value refers to non-financial benefits of an organisation to its main stakeholders and can be measured by a firm’s reputation. Finally, sustainable value is defined as value which does not harm future generation’s welfare.

The eighth category divides studies in those considering time lags between firm’s ICD and its value relevance and those which do not. The ninth category classifies articles according to their results.
4. Results

4.1 Descriptive statistics and evolution of research (RQ1)

4.1.1 Bibliographical results. We identified only 38 studies investigating effects of voluntary ICD. This is low compared to other reviews (Guthrie et al., 2012 found 423 papers, Cuozzo et al., 2017 reviewed 246 studies). It might be a result of our selection criteria, as we exclude all studies not using effects of ICD as dependent variables. For us, this is a clear indication that despite the theoretical importance of value relevance of voluntary ICD, its effects have not been in the focus of empirical research so far.

Examining the evolution of the research field, the number of published studies per year remains “on a low level” with the exception of 2011. Overall, a trend towards a more in-depth analysis of the research field is not observed (Figure 1).

As exhibited in Table I, the studies were written by 75 different authors mostly located in Europe, followed by Asia and Australia. Only nine researchers were located in America. US scholars seem to be restricted in their publication activities by requirements of the journals of the Thompson Journal citation report, in which most IC journals are not listed (Garanina and Dumay, 2017).

Only 13 per cent of the articles are single-authored, the rest has two or more authors, mainly from the same country. Only 12 authors have written more than one paper. In other IC-related reviews, 40–50 per cent of the articles are single-authored (e.g. Serenko et al., 2009; Rodriguez-Ruiz and Fernandez-Menendez, 2009).

4.1.2 Quality of publications. Journal longevity and impact factor are considered as indicators for the quality of the publishing journal. The impact factor was measured by the Scimago journal rank indicator in the year of publication (www.scimagojr.com/journalrank.php (23 August 2018)). Nearly all journals have a relatively short longevity and an impact factor below 1. Four journals were not even ranked.

Table II shows some descriptive statistics of the studies and publishing journal.

The number of references is regarded as an indicator for the level of elaboration of a paper. On average, papers cite 62 references which are comparable to the results of similar reviews (e.g. Rodriguez-Ruiz and Fernandez-Menendez, 2009).

4.1.3 Citation analysis. We use citation analysis to evaluate the impact of the articles (Inkinen, 2015; Massaro et al., 2016; Cuozzo et al., 2017). On average, the papers receive 51 citations. As older articles can receive more citations, the average rate of CPY was also calculated. The following table shows the top 3 papers with respect to the TNC and the CPY. Compared to other reviews, TNC and CPY of the top-ranked studies are very low.
(e.g. the top cited paper in Cuozzo et al., 2017 received 936 TNC and 78 CPY). Thus, research of effects of ICD does not gather much academic attention (Table III).

The articles were published in 18 different journals. Following Guthrie et al. (2012) and Dumay and Garanina (2013), we categorise the publishing journals in specialist IC journals, accounting journals and generalist and other journals and differentiate our results according to this categorisation. We aggregated the results for all journals with only one publication (Table IV).

The research field is dominated by specialist journals. As in other reviews (Cuozzo et al., 2017), the *Journal of Intellectual Capital* is the most influential with respect to number of published articles and citations.

Overall, the research field is quite fragmented and has received only minor academic attention. The number of researchers is limited and the level of research productivity is still low.

### 4.2 Main foci and critique of research (RQ2)

#### 4.2.1 Research objects and sample sizes
In total, 28 studies analyse voluntary ICD of mainly listed companies, 6 studies research voluntary ICD in IPO prospectuses. The rest focusses on the use of disclosed IC information of analysts. We did not find studies of effects of voluntary ICD of

<table>
<thead>
<tr>
<th>Rank</th>
<th>Study</th>
<th>TNC</th>
<th>Rank</th>
<th>Study</th>
<th>CPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abdolmohammadi (2005)</td>
<td>409</td>
<td>1</td>
<td>Abdolmohammadi (2005)</td>
<td>34.1</td>
</tr>
<tr>
<td>2</td>
<td>Orens et al. (2009)</td>
<td>124</td>
<td>2</td>
<td>Orens et al. (2009)</td>
<td>15.5</td>
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</table>

#### Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of authors</td>
<td>1</td>
<td>4</td>
<td>2.3</td>
<td>2</td>
<td>0.77</td>
</tr>
<tr>
<td>Journal longevity</td>
<td>5</td>
<td>47</td>
<td>17.3</td>
<td>14</td>
<td>11.4</td>
</tr>
<tr>
<td>Impact factor</td>
<td>0</td>
<td>0.925</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>References</td>
<td>14</td>
<td>166</td>
<td>62.1</td>
<td>57</td>
<td>31</td>
</tr>
<tr>
<td>Total numbers of citations (TNC)</td>
<td>0</td>
<td>409</td>
<td>51</td>
<td>35</td>
<td>69.6</td>
</tr>
<tr>
<td>Citations per year (CPY)</td>
<td>0</td>
<td>34.1</td>
<td>6.8</td>
<td>5.8</td>
<td>6.2</td>
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#### Table II.

<table>
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<tr>
<th>Journal</th>
<th>Articles</th>
<th>TNC</th>
<th>CPA</th>
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<tbody>
<tr>
<td>Specialist journals</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><em>Journal of Intellectual Capital</em></td>
<td>14</td>
<td>1,136</td>
<td>81.1</td>
</tr>
<tr>
<td><em>Journal of Human Resource Costing and Accounting</em></td>
<td>4</td>
<td>174</td>
<td>43.5</td>
</tr>
<tr>
<td><em>International Journal of Learning and Intellectual Capital</em></td>
<td>3</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>1,331</td>
<td>63.4</td>
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<table>
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<tr>
<th>Accounting journals</th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td><em>Australian Accounting Review</em></td>
<td>2</td>
<td>138</td>
<td>69</td>
</tr>
<tr>
<td><em>Other Accounting Journal</em></td>
<td>8</td>
<td>89</td>
<td>11.1</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>227</td>
<td>22.7</td>
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<table>
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<tr>
<th>Generalist journals</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td><em>Management Research News</em></td>
<td>2</td>
<td>147</td>
<td>73.5</td>
</tr>
<tr>
<td>Other generalist journals</td>
<td>5</td>
<td>230</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>377</td>
<td>53.9</td>
</tr>
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</table>

#### Table IV.

*Effects of voluntary ICD for disclosing firms*
non-profit and public institutions or small- and medium-sized companies. The concentration on publicly listed firms seems to be caused by the availability of information about their ICD.

The sample sizes of the studies might pose some concerns. The smallest sample consists of only 20 firms (Khan and Ali, 2010; Singh and Kansal, 2011), the largest samples collected data from 668 firms (Orens et al., 2010) with a mean sample size of 132.9 firms. Given such small samples for 50 per cent of all studies raises questions of reliability and validity for research results.

4.2.2 Source documents. Concerning the selected source of ICD, the studies mainly concentrate on annual financial reports (23) and IPO prospectuses (6). Voluntary ICD via corporate websites is far less researched. The effects of voluntary ICD via conference calls or specific IC statements are not analysed at all. Overall, annual financial reports are easily accessible and regularly published source documents for ICD, but they are criticised because they “[...] are used by firms to establish their desired position among their stakeholders, rather than to simply communicate the objective reality of the firm through ICD” (Abeysekera, 2006).

4.2.3 Theoretical underpinning. Nearly all studies discuss the results of prior studies, but 12 studies do not explicitly underpin their models with theoretical considerations. The other studies use agency theory and information asymmetries (16), stakeholder theory (3), signalling theory (4) and legitimacy theory (3) to derive their hypothesis. Nine studies use other theories. Some studies use more than one theory. Overall, our results support the findings of Abhayawansa and Abeysekera (2009, p. 303) that the “theoretical underpinning of research [...] is in its infancy, and it is an opportune time to investigate possible theoretical foundations for such research”.

4.2.4 Measurement of effects. All studies investigate effects of voluntary ICD on monetary value. The majority of the studies research works effects on firms’ market value or capitalisation (21) or on the cost of capital (8). Effects of utility value such as forecasts errors or recommendations are mainly investigated for financial analysts (7). The other effects are studied far less.

Although the majority of studies consider time lags between voluntary ICD and potential effects, we identified 17 studies not accounting for possible delays.

4.2.5 Research methods. Nearly all papers used content analysis, only four studies applied other methods such as questionnaires (e.g. Petty et al., 2008; Ousama et al., 2011). Only a few studies address how the inherent subjectivity of the coding is mitigated by using multiple coders or objective coding instruments and calculate reliability measures (e.g. Kristandl and Bontis, 2007; Orens et al., 2009; Maaloul and Zéghal, 2015).

4.2.6 Effects of voluntary ICD (RQ3). As some studies investigate more than one effect, we find 34 results supporting the assumed effects and 13 non-supportive or negative results (Table V).

Most studies indicate a positive effect of voluntary ICD on monetary value. Voluntary ICD reduces information asymmetries between firm’s management and investors (Orens et al., 2010) resulting in lower cost of equity and of debt (e.g. Kristandl and Bontis, 2007; Orens et al., 2009; Mangena et al., 2016; Anifowose et al., 2017). For US–American firms, the effect is only significant for cost of equity capital. Orens et al. (2010) explain this result with differences in accounting standards. In countries with lower mandatory reporting requirements as in Continental Europe, capital markets rely more on voluntary ICD to complement mandatory disclosed information.

The negative association between voluntary ICD and firms’ cost of capital is not supported by La Rosa and Liberatore (2014): for a panel of 77 listed European firms from the biopharmaceutical and chemical industry, they find a significant positive relationship between level of ICD with respect to R&D activities and the firms’ cost of equity capital.
The authors explain their findings with the confidential nature of the disclosed information about a firm’s innovation, patents and new technology.

The results of studies examining the effect of voluntary ICD on firm value are more mixed. Orens et al. (2009) observe a positive relationship between voluntary ICD and the market value of listed firms from Belgium, France, Germany and the Netherlands supported by the majority of the other studies. Sáenz and Gómez (2008) and Castelo Branco et al. (2010) find a positive association between voluntary ICD and firm value that fails to reach the required significance level. The contradicting results of the remaining four studies might partially result from their sample selection. Three studies (Singh and van der Zahn, 2007, 2009; Van der Zahn et al., 2007, 2009) rely on a nearly identical database. The study of Singh and Kansal (2011) has a sample size of only 20 firms. A positive effect of voluntary ICD on the utility value is supported for financial analysts. Analysts use voluntarily disclosed IC information for company valuation (Flöstrand and Ström, 2006; Petty et al., 2008). Voluntary ICD reduces analysts’ forecast errors (Hsu and Chang, 2011; Maaloul et al., 2016). Moreover, they are more likely to follow and give favourable recommendations for firms for which they have more information (Farooq and Nielsen, 2014; Maaloul et al., 2016). Effects of voluntary ICD on the utility value outside capital markets have not been researched so far.

Effects on social value are hardly researched. Only two studies report a positive effect of voluntary ICD on firm reputation or image for specific industries and countries (Sáenz and Gómez, 2008; Alvarez Dominguez, 2011), so that the results cannot be generalised. Other effects of voluntary ICD outside capital markets have not been investigated so far.
5. Discussion

5.1 Discussion of results

In sum, the results of our SLR are as follows: first, the number of studies is still limited. The number of publications per year is relatively small; a further trend for an improved methodology or content is not observed.

Second, the studies mainly concentrate on voluntary ICD of listed firms reported in their annual financial reports and IPO prospectuses especially in Europe, Asia and Australia. Voluntary ICD of non-profit organisations and non-listed companies as well as disclosure via specific IC statements or private disclosure have not been empirically analysed so far. Third, research on the effects of voluntary ICD has not gathered much academic attention. It was published in specialist journals and relatively low ranked accounting and generalist journals and has not received many citations.

Fourth, the studies mainly support the positive effects of voluntary ICD, but there is a concentration on monetary value from an investor’s perspective and the utility value from the financial analysts’ perspective. Voluntary ICD seems to reduce information asymmetries between a firm’s management and the capital market and has a positive impact on analysts’ following, recommendations and forecast validity. In addition, ICD lowers companies’ cost of capital and can be related to a positive development of firm value.

We agree with Dumay (2016) that firm value is not directly created by ICD but results from market structure and competitive advantages. However, market value is a function of expectations of investors, and expectations are based on information. For example, disclosure of information about firm’s R&D and innovation activities may be regarded critically by capital markets, whereas the disclosure of human capital information is positively evaluated by employees. Here we see a role of ICD in value creation because it can support expectations of stakeholders, which result in the respective value for them. In this regard, ICD neither is the whole picture of value creation nor is it unessential or a “myth” (Dumay, 2016).

Fifth, the reviewed studies are still grounded in second stage IC research. Third stage studies analysing processes of value creation by voluntary ICD in disclosing firms in detail have not been identified. In addition, the reviewed studies are mainly based on a narrow concept of value relevance, focussing on monetary and utility value for the disclosing firms.

5.2 Discussion of methodology

The reviewed studies suffer from several methodological shortcomings. Some studies lack a theoretical underpinning. Others are mainly grounded on agency theory and thus neglect effects of voluntary ICD outside capital markets.

Nearly all studies use content analysis, although other methods such as interviews are also possible data sources (Abeysekera, 2006). Content analysis is heavily criticised because of its subjectivity and lack of standards (Dumay and Cai, 2014; Guthrie, 2014). Moreover, IC information in annual reports is not necessarily intended to satisfy the specific information needs of analysts, investors and other stakeholders (Dumay and Guthrie, 2017; Cuozzo et al., 2017).

Only two studies investigate the effects of mandatory and voluntary ICD (Mangena et al., 2016; Ott et al., 2014), although there might exist various interaction effects between both types of ICD. The studies lead to mixed results concerning the existence of a substitutive vs a complementary effect between mandatory and voluntary ICD (Schiemann et al., 2011).

6. Implications and limitations

6.1 Implications for research

6.1.1 Focus on other stakeholders and effects. Most studies focus on investors and analysts (monetary and utility value). According to stakeholder and legitimacy theories, voluntary ICD also supports an improved mutual understanding between different stakeholders...
with positive effects on hiring and enduring employment of talented employees or long-lasting relationships to quality-seeking customers (Caputo et al., 2016). Recent discussions of integrated reporting stress such stakeholders’ views (Cheng et al., 2014; Cuozzo et al., 2017).

6.1.2 Focus on other research units. Most studies focus on voluntary ICD in annual financial reports of listed companies. Therefore, future studies should enlarge the data basis to small- and medium-sized companies and other forms of disclosure, because these sources probably reveal more firm-specific information with a higher information content (Cuozzo et al., 2017).

6.1.3 Integrate the results with results of other value relevance studies. There are other types of voluntary disclosure besides ICD such as information about corporate strategy or corporate governance (Broberg et al., 2010). Thus, future reviews should integrate the results of studies analysing other types of voluntary disclosures with the results of our review in order to research the value relevance of voluntary disclosure in total.

6.1.4 Enter advanced stages of IC research. Future studies should analyse how the process of value creation by voluntary ICD works in detail and thus enter third stage IC research (Dumay and Garanina, 2013). In addition, fourth stage research suggests analysing monetary and non-monetary effects of ICD and processes of value creation in the wider eco-system of a firm. Thus, fourth stage IC research goes beyond the managerialist approach and asks which value is created by ICD for society and the environment (Dumay, Guthrie, Ricceri and Nielsen, 2018; Dumay, Guthrie and Rooney 2018). Meanwhile, Dumay, Guthrie, Ricceri and Nielsen (2018) and Dumay, Guthrie and Rooney (2018) even speak of a fifth stage with an even wider understanding of the value concept and go beyond the traditional understanding of IC as relational, structural and human capital.

6.1.5 More rigorous application of content analysis or multi-method approach. Future studies should be based on the recommendations of Dumay and Cai (2015) and Goebel (2015) concerning content analysis. In order to understand the effects of voluntary ICD in detail, a multi-method approach might be necessary.

6.1.6 Disseminate research to the accounting research community. Following Guthrie et al. (2012), we also encourage researchers to publish their studies in high-quality accounting journals, as this is a necessary prerequisite to gather more academic attention and to contribute to the ongoing research concerning the value relevance of ICD.

6.2 Practical implications
Our reviewed studies revealed positive effects of voluntary ICD. Hence, voluntary ICD is neither a management fashion or sort of window dressing (Fincham and Roslender, 2003) nor based on a wealth-creation myth (Dumay, 2016). As financial analysts and investors use IC information, firms can benefit from relevant voluntary ICD. A further improvement of the quality of voluntary ICD could lead to even stronger positive effects. Here regulators and standard setters should think of developing standards for ICD that should reflect information needs of different stakeholders.

6.3 Limitations
Several limitations of our study are worth to be noted. First, we focus only on ICD studies and neglect studies analysing the value relevance of other types of voluntary disclosure. Although we strictly tried to apply the recommended SLR process, there remains a risk of missing some relevant studies. Due to the relatively small number of available studies, we could integrate only a limited number of results concerning effects of voluntary ICD.
1. The following databases were used: Business Source Complete, Abi Inform Global, link.springer.com, JSTOR, EconBiz, ECONIS, Science direct, Social Science Research Network, Taylor and Francis and Wiley.

References


Further reading


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